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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,245	05/09/2005	Martin Fritzsche	3926.149	2724

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AKERMAN SENTERFITT
P.O. BOX 3188
WEST PALM BEACH, FL 33402-3188

EXAMINER
WANG, CLAIRE X

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/534,245	FRITZSCHE ET AL.
	Examiner	Art Unit	
	Claire Wang	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 May 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-22</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09 May 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-8, 10-18 and 20-22 are rejected under 35 U.S.C. 102(e) as being

anticipated by Berenz et al. (US 7,110,570 hereinafter "Berenz").

        As to claim 1, Berenz teaches A method for determining the three-dimensional

position of vehicle passengers (imaging system that uses face recognition software to

identify and track a person; Col. 2, lines 25-28) which comprises the following steps:

observing the vehicle passengers by means of at least two cameras (1, 2, 1', 2') (Fig. 8

shows locations of multiple cameras within a vehicle that monitor persons within the

vehicle) which are disposed in such a way that they can operate in non-stereo mode

(the system includes infrared emitters that emit an infrared signal along a predetermined

field-of-view, and an infrared sensor, such as a CMOS sensor used as a video signal

array, none of which are stereo cameras; Col. 2, lines 28-31); extracting appropriate

characteristics from the recorded video data of the vehicle passengers (video data

patterns received from an object being analyzed; Col. 3, lines 56-57); initializing a

tracking method by means of a head model (determines whether the object has a face;

Col. 3, line 57); verifying the extracted characteristics by means of pattern recognition

(face recognition software; Col. 4, line 6); and tracking the verified characteristics by

means of the head model (tracking of the person; Col. 4, line 7).

As to claim 2, Berenz teaches wherein the characteristics are selected from a

group which consists of facial or shape characteristics of the passengers (determines

whether the object has a face from the video pattern that was received; Col. 3, line 57).

As to claim 3, Berenz teaches wherein the facial or shape characteristics

comprise eyes, nostrils, corners of the mouth, eyebrows or hairline (person's eyes are

detected; Col. 4, line 47).

As to claim 4, Berenz teaches wherein the cameras (1, 2, 1', 2') do not need to

be synchronized (Berenz does not teach that the cameras used in his invention is

synchronized thus his method does not apply synchronization to cameras within the

vehicle).

As to claim 5, Berenz teaches wherein the cameras (1, 2, 1', 2'), having different fields of view, are positioned in such a manner that one eye of a driver (4) is always visible (camera 116 in Fig. 8 shows the camera is placed directly in front of the driver, thus the driver's eyes would be visible at all times when the driver is looking forward and even if the driver turns sideways to check their blind spot, the position of the camera will capture at least one eye of the driver.).

As to claim 6, Berenz teaches determining the head attitude of passengers (back and forth motion or head nods of the driver's head; Col. 9, line 19).

As to claim 7, Berenz teaches determining the direction of view of passengers (the face recognition software can sense the difference in the diver's eye coordinates; Col. 9, lines 20-22).

As to claim 8, Berenz teaches determining the state of the eyelids of the passengers (this systems finds the percentage of time that the eyes are closed during a fixed time interval to determine if the driver is asleep; Col. 9, lines 14-16).

As to claim 10, Berenz teaches wherein the head model is an anthropometric model (system may be used to detect a drowsy human driver based on head nods; Col. 9, lines 3-12).

As to claim 11, Berenz teaches wherein the pattern recognition is a statistical pattern recognition (the system recognizes that if the eyes are shut more than 70% of the time over two seconds then the driver is drowsy and may be falling asleep (Col. 9, lines 16-18), this is using previously gather information or statistics to do pattern recognition, since the system must recognize that the eyes are closed or open).

As to claims 12-18, they are the device claims of claims 1-8. Thus they are analyzed in the same way as claims 1-8. Please see above for detail analysis.

As to claim 20, Berenz teaches wherein the cameras (1, 2) are arranged in the front area of the vehicle (10) (116 120, Fig. 8).

As to claim 21, Berenz teaches wherein one camera (1') is arranged in the front area (116 Fig. 8) and the other camera is arranged in the side area of the vehicle (10) (144 Fig. 10).

As to claim 22, Berenz teaches wherein the controller (3) also comprises means for controlling the release of an airbag and/or the adjustment of a head rest (5) and/or the adjustment of a seat of the vehicle by means of the detected head position.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Berenz in view of Trivedi et al. (US 2006/0187305 A1 hereinafter Trivedi).

As to claim 9, Brenez teaches the cameras can be operated asynchronously

(Berenz does not teach that the cameras used in his invention is synchronized thus his

method does not apply synchronization to cameras within the vehicle). However,

Brenez does not teach wherein the tracking step is based on the Kalman filtering of all

recorded characteristics of the cameras. Trivedi teaches a video tracing system that

uses the Kalman filtering for head tracking (Paragraph [0006], line 15). Thus, Trivedi's

use of Kalman filtering for head tracking reads on the claimed tracking step based on

Kalman filtering. Therefore, it would have been obvious to one ordinarily skilled in the

art at the time the invention was made to combine Brenez's passenger tracking system

with Trivedi's head tracking system that uses Kalman filtering in order to speed up the

head detection and rejecting false positives (Trivedi [0068], lines 18-22).

As to claims 19, it is the device claims of claim 9. Thus they are analyzed in the

same way as claim 9. Please see above for detail analysis.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

    a. Paul et al. (US 7,050,606 B2) teaches tracking and gesture recognition system suited for vehicular control applications.

    b. Breed et al. (US 6,820,897 B2) teaches a vehicle object detection system and method.
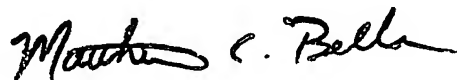
Contact Information

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Claire Wang whose telephone number is 571-270-1051.

The examiner can normally be reached on Mid-day flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Claire Wang
02/02/2008

Matthew C. Bella

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600